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A Novel Approach For Evaluating The Performance Of SPC Productcodes Under Erasure Decoding

Kousa, M.A.;Dept. of Electr. Eng., King Fahd Univ. of Pet.Miner., Dhahran;

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King Fahd University of Petroleum & Minerals

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Summary

Product codes are powerful codes that can be used to correct errors or recover erasures. The simplest form of a product code is that where every row and every column is terminated by a single parity bit, referred to as single parity check (SPC) product code. This code has a minimum distance of four and is thus guaranteed to recover all single, double, and triple erasure patterns. Judging the code performance based on its minimum distance is very pessimistic because the code is actually capable of recovering many higher erasure patterns. This paper develops a novel approach for deriving an upper bound on the post-decoding erasure rate for the SPC product code with iterative decoding. Simulation shows that the derived bound is very tight

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